# QUEEN'S COLLEGE JOURNAL.

VOL. X. KINGSTON, CANADA, DECEMBER 21, 1882. No. 6.

**Queen's College Journal,**

Published IN TWELVE NUMBERS during the Session by the ALMA MATER SOCIETY of Queen's University.

*STAFF:*

A. McLACHLAN, - *Managing Editor,*

EDITING COMMITTEE:

*Divinity*—JAMES SOMERVILLE, B.A.
*Medicine*—T. A. MOORE, W. G. ANGLIN.
*Arts*—RODERICK McKAY, B.A. R. M. DENNISTOUN.
G. F. HENDERSON. F. W. JOHNSTON.
A. G. FARREL. J. J. WRIGHT.

J. S. SKINNER, *Secretary-Treasurer.*

TERMS:—Per Session, $1.00; Single Numbers, 10 cents.

Matter for publication should be addressed to A. McLACHLAN; Business letters to J. S. SKINNER, P. O. Drawer 1146, Kingston, Ont.

The Editor must be acquainted with the name of the author of any article, whether local or literary.


WE give, in another column, a brief sketch of the Dialectic Society, the latest addition to our already long list of students organizations. The objects of the Society we have already alluded to, and it only remains for us to add our good wishes to those already expressed by Principal, professors and students, for its present and future prosperity. We have no doubt that these wishes will be fully realized.

---

IT has been our intention for some time to draw attention to the fact that the class of '82 is not represented among the class-pictures that decorate the walls of the reading room. How is this, '82? Surely you are not ashamed of your phizes. In our opinion you had your full share of beauty, and your class was of fair size. We think it a great pity that so good a custom should be dropped, and we hope some member of your class will attend to this matter, since we know a picture was taken. You are doing yourselves and posterity an injustice in not handing down to future generations your genial faces.

---

THERE is, perhaps, nothing more narrowing to the mind of a student than spending his whole time in studying for one particular prize or honor, to the utter neglect of his other classes. If a man really has a love for one particular subject, however, and wishes to make a specialty of it, by all means let him do so, but let him do so prompted by a love for the study, not by expectation of gaining a prize, and further let him not neglect his other studies in pursuing this end. A man who studies from love of his work, even though he may not gain the prize, still retains a sense of the pleasure enjoyed in its pursuit, while he who studies for the prize alone, and fails, feels thoroughly disheartened by his failure, and thinks that he has gained nothing by his study.

Our new curriculum affords peculiar advantages to students wishing to pursue any particular study, and those who fail to take advantage of the inducements offered, will surely not be looking out for their own interests. It is too late now for students of '83, or even for many of '84, to avail themselves of this, but to men of the junior classes, we would say, mould ye your courses according to this new plan, and in the days to come ye will not regret it.

---

THE good old custom of having class suppers is something that we wish was more general at Queen's. At present, and we do not know if it has ever been otherwise, it is observed only by the senior class of each year. The happy results which accrue from such social gatherings of class-mates must be so apparent to all that we wonder the junior years do not follow the example of the seniors in this respect. Some, in acknowledging their usefulness, urge as an argument against them the heavy expense incident on carrying out such a project successfully. To this we have only to say that we do not think it ought to be an objection. Great expenditure is not necessary to a successful re-union. To have a grand banquet, to act as if we were mere eating machines, gluttons and wine-bibbers, is not the object of these annual gatherings. It is to bring all the members of a class together, at least once in the year, so as to promote a social, friendly feeling among them. To bring them together somewhere outside of a class-room, where they may spend an enjoyable evening and cultivate the friendship of their fellows, by which the bond of union existing between them may be strengthened. The genial, social qualities of men, and of women too, are always supposed to be at their best, while they are surrounding the social board, and from time immemorial among all nations, supping together manifests the greatest friendship. Where such good-fellowship exists, it is not necessary that the table should groan under all the varieties which the season affords, as much enjoyment would attend a simpler repast. Another reason why we ask attention to this subject, a reason why these re-unions are more necessary, if we may be allowed to use the word, than in the former days of Queen's, is that in former days the members of a class not only entered, and, if all went well, left together the college walls, but they attended together each year the same classes. This is no longer the case, a student may now take his classes in any order he pleases, and as many of the classes are optional, it so happens, that men of the same year, may go through their entire course without ever being in the same classes together. Of course this rarely happens, but it is just as rare a thing for two men to take the same subjects at the same time all through their course. The former state of things cherished a spirit of *esprit de corps* we do not now have, and it is to strengthen this spirit that we advocate class suppers.

---

LAST week the Royal College proved a perfect Godsend to the quidnuncs. Its students magnified their office and met with the most gratifying responses all round. The ladies among them constituted themselves judges of what a Professor might, and what he might not, teach. The gentlemen sent their ultimatums to the Faculty. Colleges in other parts of the Domiuion competed for the honor of their presence, fees or no fees. The Mayor of the City, with Ex-Mayors in profusion, spent the midnight hours and the short hours too in beseeching them not to put out the light of Kingston. The press all over the Dominion chronicled the changing phases of the conflict, while the local newspapers apparently instructed their reporters to take note of nothing else. The transit of Venus was a trifle to it, in the public interest excited. Ordinary mortals would be spoiled by so spontaneous an outburst of emotion; but the students of the Royal will heed it with all the nonchalance that pre-eminently distinguishes them.

Now that the hurly-burly is done, there are not many points on which it would be profitable to descant. On one, the question of co-education in medicine, opinions are not unanimous. On another, the attitude of Trinity Medical College, there can be no

two opinions, except, perhaps, among the inmates of Rockwood or Trinity. In no department is the question of co-education surrounded by so many practical difficulties as in medical study. With after-the-event wisdom we can now see that the Professors of the Royal College should not have made so risky an experiment, when one of their number was opposed to it on principle, and that one a gentleman occupying a chair from which delicate questions had to be discussed. The students made a mistake when they closed a presentation of the case, admissibly from their point of view, with a threat of leaving. They should have reflected that gentlemen cannot preserve their self-respect if they discuss a question so presented. The Faculty, too, knowing how peculiar are the relations between medical professors and students, might have taken a more conciliatory course at the outset. To return a letter to the writer is considered a species of insult that puts an end to further correspondence.

But all mistakes were thrown into the shade by the action of the Trinity Professors. To say it was worse than a crime, it was a blunder, is weak. It was both, and more. It was a violation of the *espret de corps* that ought to animate professional men; an offence against college decorum and a downright social indecency. A modicum of good sense and good manners is usually expected from any collegiate faculty; but hereafter this assumption will be made with limitations. Hearing that there is a prospect of breaking up a sister institution, the Toronto Professors are hastily summoned; or the Dean, knowing their sentiments, acts without going through that form. Her Majesty's mail is too slow in such an exigency, and the telegraph is called into requisition; and lest there may be other Deans likeminded, rates are cut so low as to defy competition.

It is a melancholy business, and the excuses offered by the offenders make it worse. Of course we here speak subject to correction, as we have only the newspapers' statement of their pleas. It seems that they urge that they did a somewhat similar act previously. When a dish was broken Mrs. Maclarty always cried, "It was crackit afore!" But not even Mrs. Mclarty would have offered the excuse, "I crackit it afore." They plead, too, that they thought McGill intended to do the very thing they did. McGill will appreciate the compliment. But what are we to think of the moral elevation of the gentlemen who would use such an argument? A Highland rascal was wont to declare, "If others are honest, I will be honest; but if they cheat, thank God I can cheat too." But even Dugald never dreamed of the code, "If I think others intend to cheat, I shall take care to get the start of them." It is unnecessary to say a word more about the Trinity Medical Professors. The one comfort in connection with the whole embroglio is that those gentlemen went out for wool, and returned home shorn; shorn of their honour and without the least mite of the wool they so desperately longed to get.

## THE NEW CURRICULUM.

CHANGES are always acceptable when they tend towards improvement, and changes in the curriculum of a University are in this respect like any other changes. We propose to consider in this relation the recent changes in the curriculum of Queen's University.

A university course may be regulated with a view to serving two different purposes, either to give a broad and sound liberal education, or to make specialist in some department of study. Queen's has always acted upon the assumption that the first of these is the most important, and that specialization really belongs to a post-graduate course. So stringently was this principle carried out in former years that it was quite impracti-

cable to have an extended honor course, the great amount of work done in "pass" subjects by all students, whether reading for honors or not, preventing all except very superior students from attempting honor work. In those days the classes were "wedged" into the different years, as is still done, I believe, in the majority of Canadian colleges, and no relief from this stereotyped system was allowed even to honor students.

The first change for the better was made some years since, when the principle of counting a student's standing by "years" was abolished and the principle of "subjects" instituted in its stead. Then first a number of Options were introduced, but every student was compelled, for his B. A. degree, to pass in a particular number of subjects, one of which, at least, must be a senior subject. And to prevent students from acting upon the mistaken idea that they could master all the subjects of the curriculum in one, or at most two sessions, they were not allowed, except in special cases, to present themselves for examination in more than three subjects at the final examinations of each year. And as there were eleven subjects in all, the course, although counted by subjects, was necessarily a four years course.

Still no advantages were given to honor students, as they in common with all others were required to "acquit themselves like men" in the eleven subjects demanded. The consequence was that while a comparatively high efficiency in the "pass" course was obtained, the honor course, on account of the great amount of "extras" which it demanded, was but "poorly honored."

The problem which thus presented itself to the senate was, how to form a profitable compromise between specialization on the one hand and width and variety of mental culture upon the other, without to any extent lowering the standard for the mere "pass-man," and without increasing to too great an extent the labor of professors already hard-worked. This problem they seem to have solved in a very satisfactory manner. The principle which appears to have been followed in framing the recent regulations was to exact as many subjects from the honor-man as from the pass-man, but to allow the former, to a certain extent, to elect honor-subjects in lieu of the easier or more uncongenial pass subjects. The whole system, as it has been made by the recent changes and as it at present stands, will be more readily understood by consulting the following synopsis of it.

In the first place all pass-men for B. A. are required to pass the examinations in junior Latin and junior Greek, and in senior Latin and senior Greek; but French and German together, taken as both junior and senior subjects, may be substituted for Greek.

Secondly, all pass-men for B. A. are required to pass in senior Mathematics, junior Physics, junior and senior English, junior Philosophy, and two of the following, viz.: Chemistry, History, Natural Science.

Each subject, with two unimportant exceptions, is taught for five hours weekly during the whole session.

Such is the pass-course which must be followed, as far as subjects are concerned, by every person contented to be ranked as a mere pass-man.

Moreover, the Senate recommends a certain order of subjects to be pursued by students proceeding to a degree, but if a student thinks himself wiser than the Senate in this respect he is under no compulsion to follow their advice, but with a few exceptions he may take the subjects in that order which he thinks will best suit his conveniences. If, however, he should find himself at any time in a difficulty, owing to conflicting classes, he can have only himself to blame.

The Honor departments are four in num-

ber, and are named respectively the departments of Literature, Philosophy, Mathematics and Science.

Candidates for honors in the department of Literature may pursue one of four courses, and they are not required take Chemistry or Natural Science, nor to take History, unless they choose History as one of their honor subjects. The courses are,

1. Honors in Latin and Greek; 2. honors in Latin and French and German; 3. honors in Latin and English and History; 4. honors in French and German and in English and in History.

Candidates for honors in the department of Philosophy, are not required to take Chemistry, History, or Natural Science, but must pursue the honor course in mental and moral science.

Candidates for honors in the department of Mathematics are not required to take senior Classics, Chemistry, History or Natural Science, and they may pursue one of two courses. Those are,

1. Honors in pure Mathematics, with the class of senior Physics; 2. honors in Physics with the third year honor work in Mathematics.

Candidates for honors in the department of Science are not required to take senior Classics, and they may pursue one of two courses:

1. Honors in Chemistry and in two of the three subjects, Botany, Zoology, Geology; 2. honors in Chemistry and Experimental Physics, and the subject of Practical Astronomy.

Such, then, are the new arrangements, and we consider that they are a decided improvement upon anything which preceded them. Candidates for honors have some relaxation from the simpler pass subjects without being so completely relieved from them as to make their education decidedly one-sided. Thus a considerable amount of specialization is introduced without materially interfering with that breadth of culture which it is the important duty of a college training to give.

## SCHELLING'S TRANSCENDENTAL IDEALISM.

As was announced in the JOURNAL last session, the publishing firm of S. C. Griggs & Co., of Chicago, have undertaken to issue a series of German philosophical classics, to consist chiefly of a critical exposition of the philosophic systems of Germany's four great ideal philosophers, namely, Kant, Fichte, Schelling and Hegel. In order to carry out this purpose, they secured the assistance of the most distinguished American writers on philosophy. Among others, Professor Watson was asked to contribute to the work, and the exposition of Schelling's philosophy entrusted to him. That work has now appeared, and will no doubt be gladly welcomed by those who take any interest in studies of this nature; since the work not only affords a clear insight into the system of Schelling, considered both in itself and in its relations to the productions of the other members of the same school, but it also supplies, in the critical remarks upon that system, a clear idea of the most important problem of modern philosophy, and the nature of the solutions afforded. The present volume will need but little recommendation to those who have already studied the contents of Dr. Watson's previous admirable work, "Kant and his English Critics," which met with such a favourable reception in all quarters of the philosophical world, and especially in Great Britain.

As has just been indicated, Professor Watson, in the present work, has not only presented in a clear and concise manner the important points in the philosophy of Schelling and estimated their relative values, but he has also traced the connection between his system and those of the other disciples of the transcendental method, showing his relation, through Fichte to Kant on the one hand, and to Hegel on the other. Kant, he shows, had revolutionized the ordinary conceptions of existence and knowledge, and opened a new path to the solution of those problems relative to the conditions and extent of human kuowledge, and the nature of our moral and spiritual existence. That his task should have been left somewhat incomplete, was only natural, This incompleteness manifests itself more particularly in his conceptions with regard to our moral and spiritual relations, which are rather vague and unsatisfactory; hence it was mainly to the further and more accurate determination of these relations that his successors devoted themselves. In the first chapter of the present work, following a preliminary account of the general relation of Schelling to his brother idealists, we have a most excellent epitome of the whole Kantian philosophy, in which the system is viewed rather as it appears in its general results than in its individual parts;

since these parts are evidently looked at in the light of the whole, all minor inconsistencies being thus avoided, while a clear and intelligent view is presented of his whole system as it must have appeared to Kant himself in its most developed form. At the same time the real imperfections in the doctrine of Kant are by no means ignored, for, in the beginning of the chapter on Fichte, these are clearly though briefly pointed out, in order to afford an idea of the points to be developed or improved by his followers. The attempt made by Fichte to rectify these defects, as he understood them, and reduce the system of Kant to consistency with itself, is also dealt with, and his desire to rid philosophy of all things in themselves with their mysterious and unknowable character, is shown to have led him to neglect, or deny, all objectivity relative to the individual subject, and to merge everything in pure intelligence or will, which, by its activity alone, gives rise to all known existence. Thus from the absolute Ego he spins out both subject and object, while it is to that Ego that we must look for their union. But, adopting this method, as Professor Watson has shown, he was quite unable to show in a satisfactory manner, how these various individual Egos were related to each other, and to the Universal Intelligence. Now, it is from a protest against this utter disregard of anything as objective in distinction from the individual Ego, that Schelling is shown to have taken his course. Having defined the position which Schelling occupied with regard to the theories already advanced, the writer is in a suitable position to make intelligible the efforts which he put forth to give a still more adequate solution of the critical problem.

As the distinctive feature of the book is a critical statement of the philosophy of Schelling, the body of the work is devoted to a detailed examination of his system. The gradual separation of his system from that of his master, Fichte, the continuous development and unfolding of that system as he advanced from stage to stage, obtaining clearer and broader views of the nature of his task,—though his comprehension of the proper solutions of the points which he raised by no means advanced so rapidly,—and the nature of the advances made at the different stages, are set forth in a manner which removes many of the almost proverbial difficulties which attend not only the writings of Schelling, but of the whole school to which he belongs.

Having considered at some length the earlier productions of Schelling, and the formulation of the problem of transcendental idealism, Professor Watson then proceeds to set forth particularly the theoretical side of his philosophy; that which is concerned with our knowledge of the objective world and its relation to intelligence; after which he takes up his practical philosophy dealing with the nature of the will, which plays so important a part in his system, and our moral and spiritual relations generally. The end of all moral action was, for Schelling, a gradual process of the unfolding of the Absolute, or of God, in man; the ultimate good being a complete harmony of the unconditioned and conditioned, a union of freedom and necessity in an absolute identity, At the same time his great fault is shown to lie in the elevation of nature. or of objectivity, to the same level with his individual subjective intelligence, which makes their subsequent union under this absolute identity of intelligence incomprehensible. This is brought out very clearly in the general criticism of Schelling's idealism, where we find both the defects and the excellencies of his system brought to view and set in opposition to each other.

In the ninth chapter we have an examination of Schelling's later philosophy, which is found to be much more suggestive of problems still remaining to be solved than distinguished for its solution of them. Among other departures from the general tenor of his philosophy, there is noticed in these later productions, a tendency to modify that pantheistic conception of the absolute, which he had formed, and in which was merged, though in a manner more mystical than rational, all subjective and objective existence, and an attempt to give a more definite determination of this absolute intelligence in the shape of a personal God manifesting himself in the world. This attempt, however, cannot be said to have been very successful, at least from a philosophical point of view, for his conceptions of the nature of God and human freedom are lost in an atmosphere of mysticism which is born of imagination rather than of pure reason. In fact, as Professor Watson has pointed out, the importance of his philosophy consists rather in the points which he has raised and the general suggestiveness of his remarks, than in any positive or permanent contribution which he has made towards the solution of the great problems of Philosophy. In the concluding pages of the volume we find some very instructive and valuable remarks on the relation of Schelling's principles and method, both to the theories of his predecessors and to modern thought. In conclusion it is remarked, that while Schelling and Fichte have developed certain phases of the Kantian system, yet the true spirit of that system was alone apprehended and developed in its integrity by Hegel, in order to fully appreciate the value of whose system, however, a previous study of Fichte and Schelling will be found of great service.

## THE TRANSIT OF VENUS.

WE publish below the lecture delivered by Professor Marshall, in Convocation Hall, on Monday evening, 5th, before a large and intelligent audience. The subject is an important one, and was so ably treated of by the professor that it cannot fail to interest the readers of the JOURNAL, and especially those who are interested in the study of Physics and Astronomy. We are unable to give the illustrations which were used in explaining many of the points:

The transit of Venus is a phenomenon which has been observed only four times in the history of the world, viz., in 1639, 1761, 1769, and 1874. The event takes place again to-morrow, but will not occur again for 121½ years. The very rarity of such an event must arouse in a thoughtful mind a desire not only to see it but to learn the meaning thereof. When, however, we think of the years of hard work and deep thought spent by hundreds of men in preparation for observing this phenomenon, and the years spent by hundreds of others in reducing the observations made, when we think that such an event affords in favourable circumstances the most delicate means of determining the most important perhaps of astronomical constants, viz., the distance of the sun from us, when we think, further, of the sublimity of such a problem, and of the power displayed by man in being able even to attack it, I think that no apology will be required on my part for asking your attention to-night to this important event of to-morrow, and requesting you to discuss with me very shortly the different steps which have enabled astronomers to deduce from the passage of a planet across its disc the distance of the sun from us. At the same time, ladies and gentleman, the subject is one which cannot easily be thrown into a shape to strike the popular

eye as some scientific lectures can, and I must therefore trust to the sublimity and importance of the problem, the solution of which I shall try to explain to you this evening, for asking close attention to what I shall say, for without such attention it will be difficult to perceive the sequence of the different steps which lead to the complete solution. We shall consider briefly,

1. How astronomers have determined the figure and dimensions of the earth wc inhabit.

2. How they have determined the motions of the earth relatively to the sun and other bodies in space.

3. What is this body Venus which will cross the sun's disc to-morrow?

4 and lastly. How with a knowledge of the answers to the three previous questions does the transit enable us to determine the sun's distance.

1. The figure and dimensions of the earth.

That the earth is limited in every direction we infer from the fact that almost every portion of the earth's surface has been seen by man. Navigators and travellers have in various directions gone round it.

From the fact that when a ship recedes from the land, the hull disappears first in the horizon, and after it the masts, we infer that the earth has continuous curvature, and that in every direction since this phenomenon is observed not only in every horizon where there is a sea, but in every part of any particular horizon. If the earth were an infinite plane, which it appears to us, the masts, on account of their smaller magnitude, would first become invisible. This phenomenon is best seen when two steamers pass one another and are sailing in the same line. We have another palpable proof of this in the fact that the the sum of the three angles of any triangle on the earth's surface is greater than two right angles.

In looking at any considerable portion of the earth's surface, it always appears circular, unless obstructed by mountains or other irregularities, from whatever place or from whatever height it be viewed. This is equivalent to saying that any plane section of the earth is a circle, a property belonging exclusively to the sphere. If the state of the atmosphere be very different at different parts of the horizon, the outline is not perfectly circular, but this can be satisfactorily explained by the unequal effects of refraction.

In every eclipse of the moon, a phenomenon which is produced by the moon entering the earth's shadow, the outline of the shadow is invariably circular. Now, it is only a sphere of all solid figures which can always cast a circular shadow, however it be situated to the illuminating body.

Having proved by these facts the general spherical form of the earth, astronomers next proceed actually to measure it, so as to find out if there be no deviation from an exactly spherical form. This is done by measuring in different parts of the earth the length of an arc of the meridian, in going from one end of which to the other the sensible horizon, that is, the tangent plane to the earth's surface has turned through a known angle. (By doing this we measure at those parts of the earth the curvature of the earth's surface.) We know when our sensible horizon has turned through any angle by the altitude of either pole of the heavens altering by the same amount. Whether it be the earth which rotates or the sphere of the heavens which turns round it, we know that the poles of the earth are always the same. Hence, so long as our sensible horizon is the same the altitude of the pole of the heavens will be constant, but if in going directly to either pole of the earth our horizon turns through any angle, by the same angle will the altitude of the corresponding pole of the heavens be altered. Suppose the earth to have any figure whatever, and P p to be the direction of its axis, and, therefore, that in which the pole of the heavens is seen, on account of the relative sizes of the earth and the imaginary sphere of the heavens, the direction of the pole of the heavens will be the same in all parts of the earth, that is, supposing all the people in the nothern hemisphere to be looking at the pole of the heavens, they would all be looking in exactly the same direction. The pole, however, would not appear to any two considerably apart to be in the same part of the visible hemisphere. This arises from them not having the same horizon, and therefore not the same visible hemisphere. (Illustrated by a figure.)

Practically it is most convenient (in order to avoid as much as possible the effects of refraction) to measure the change in the altitude of a star near the zenith, in order to measure the change in the direction of the horizon. When, then, different arcs of terrestial meridians are by these means measured, it is found that the curvature of the earth diminishes as you go from the equator to either pole, and the law of curvature shows that the figure of the earth is very nearly that of an oblate spheroid, the shorter axis being that diameter passing through the poles or the axis of the earth itself. From these measurements it is likewise an easy geometrical problem to calculate the dimensions of the earth.

But now, if we allow the rotation of the earth about a fixed axis, a proposition which is proved, as we shall presently see by methods altogether independent of its figure, we obtain evidence of the truth of our previous deductions, which puts all doubt away. The spheroidal figure, and of that amount of ellipticity which is found by actual measurement, is the figure which a plastic body of the same dimensions and as mass that of the earth, would have assumed, provided it had the same angular velocity which the earth really has. That the earth as a whole is plastic, and that ages ago it was more so than it is now, there is strong evidence. (Experimental proof given.)

Another proof of the correctness of these calculations is thus obtained: If the earth be a spheroid, the weight of a body must be different at different parts of its surface; the calculated ratio of the weight of a body at the equator to that at either pole on this account is 590:591. Whether this agree with experiment we shall enquire when we investigate the influence of the earth's rotation on weight.

The truth of the earth's spheroidal form, like every other truth in astronomy, is more and more forced on our minds the more we learn; thus, we shall learn that the earth is a member of the solar system, and if you take any other member, *e.g.*, Jupiter, it is observed to have a spheroidal form and of that degree of ellipticity which corresponds to the time of its rotation.

Let us now consider briefly the motions of the earth relatively to the sun. These are two, its rotation about an axis once in a sidereal day, and its revolution around the sun once in a sidereal year.

ROTATION OF THE EARTH ABOUT AN AXIS FIXED IN DIRECTION

Before any deductions can be made from observations of the motions of bodies extraneous to the earth which we inhabit, we must ascertain whether the earth itself be not in motion. It is not difficult for us to understand the motions of the clouds. We generally experience at the same time the force of wind and motion of clouds; by climbing hills we learn that the velocity of the air above may be greater or less than that near the surface, or that the air at the surface may be almost still, whilst that above us is in rapid motion. It is known also that the height of the clouds is such that we may easily ascend above many of them, and when we do so we find that they are merely heaps of small globules of water suspended in the air, and even when their height is so great that we cannot reach them it is easily learned from parallax and the properties of air that they do not nearly

transcend what is called the practical limit of the atmosphere. Hence no one thinks it a strange thing that the clouds should be moving above us while the air at the surface is nearly still. But when we observe the heavenly bodies we see in their motions an imposing regularity, and we know that their motions are in no way influenced by the wind. From parallax and the properties of light we learn that amongst the heavenly bodies the earth is so insignificant that its very existence is known only to a very few, and that the differences in the distances of the heaveniy bodies are immensely great. We can also easily observe that at least a few of them have motions relatively to the rest. From such facts combined with the observation that the axis of rotation, be it of earth or heavenly sphere, has nearly a constant direction, and that appearances would be the same whether it be that the earth rotates or the sphere of the heavens, we are almost forced to conclude that while the clouds form essentially a part of the earth, and that their motions with respect to it are real, the heavenly bodies are in no close way connected with it, and that their daily uniform rotation from east to west is merely apparent, the effect of a real rotation of the earth itself. (Illustrated by travelling in a railway carriage or steamboat.)

But the axis of rotation is not absolutely fixed in direction (phenomena of precession and nutation), and if it be the sphere of the heavens which rotates, we must allow that whilst the relative positions of the stars remains the same, the axis of rotation moves amongst them, or that the earth keeps moving a little, so that the axis of the heavens might always coincide with the same diameter. Surely such phenomena are much more naturally explained by a change in the direction of rotation of the axis of the earth.

Having proved the earth's ellipticity by actual measurement, the laws of hydrostatics require that to keep the waters of the ocean on the earth's surface as they really are, there must be something influencing their weight. This is most satisfactorily explained by a diminution of weight as we go towards the equator, owing to a rotation of the earth. (Illustrated by experiment.) But Foucault's pendulum actually shows us the rotation of the earth. (This was explained by a model. Time of rotation of plane of oscillation of a pendulum in the latitude of Kingston $= 34\frac{1}{2}$ hours nearly. The gyroscope was also explained and precession illustrated by experiment.)

Another palpable proof of the earth's rotation is found in the fact that a stone let fall from the top of a tower will fall somewhat to the east of the vertical. This arises from the top of the tower having to describe a larger circle than the bottom in the same time, and having therefore a greater linear velocity from west to east.

The earth's rotation being now satisfactorily proved, let us investigate what would be the effects of such a rotation, and see if they actually exist.

Unless the earth were a rigid body such a rotation would make the earth's figure that of an oblate spheroid, which we have just proved by measurement to be its form. Another necessary consequence would be a gradual diminution of the weight of a body in going from either pole to the equator. It is easily calculated that on this account the weight of a body at the equator is to that at either pole as 288:289. But we found that owing to the earth's ellipticity alone the weight of a body was diminished by $\frac{1}{591}$st part in going from either pole to the equator. Now, $\frac{1}{289} + \frac{1}{591} = \frac{1}{194}$, and by actual experiment and calculation it is found that the weight of a body at either pole is to that at the equator as 194:193.

The trade winds can be most satisfactorily accounted for by a rotation of the earth from east to west, combined with a greater heating of the atmosphere at the equator over that at the poles. These winds, too, preserve, according to the laws of fluids, equal pressure in all parts of the atmosphere, blow from the poles towards the equator, but having less velocity from west to east, than bodies at the equator appear to blow likewise towards the east, and are therefore north-east and south-east winds. The monsoons, hurricanes, as well as the ocean currents, like the Gulf-Stream and Kuro Shiwo or Japan Stream, are explained in a similar way. The phenomena of procession and nutation are explained by a change of the direction of the earth's axis of rotation, caused by the action of the sun and moon on the protuberant matter at the equator. These bodies tend, according to the law of universal gravitation, to make the earth rotate about an axis in the plane of the equator, perpendicular, therefore, to its axis of daily rotation. (Illustrated by experiment.) Such an action can alone alter the direction of the axis of rotation, not the angular velocity. Hence precession and nutation cannot alter the length of the day. Indeed, this motion of the earth by which we reckon time is the most uniform of all motions known to us. Laplace having made a careful comparison of modern with ancient observations of eclipses, has asserted that the length of the sidereal day cannot have altered so much as the $\frac{1}{100}$th part of a second in upwards of 2,000 years. But we know that the friction of the tides on the earth's surface and its secular cooling must at length, however, slowly alter even this element,

To these proofs of the earth's rotation, it is interesting to add the evidence we obtain from the analagous motions of the other heavenly bodies. Those few which can be so closely examined, viz·, the sun, moon, and a few of the planets, are found to rotate like the earth about a fixed axis and in the same direction as the earth does.

### REVOLUTION OF THE EARTH AROUND THE SUN.

If, for several days and nights, the rotation of the sphere of the heavens about the earth be closely observed, it is found that whilst the apparent rotation of the stars is performed uniformly, that of the sun or moon is not uniform. Hence in addition to a daily rotation, these bodies have a motion relative to the earth. On account of this new motion of the sun, it is found to describe a great circle of the sphere of the heavens inclined to the equinoctial at the angle of about $23\frac{1}{2}°$ in $366\frac{1}{4}$ sidereal days. This path of the sun amongst the stars is called the Ecliptic and is practically fixed. You must not confound a heavenly body's apparent path in the sphere of the heavens with its real path in space. Thus, while the sun's apparent annual path in the sphere of the heavens is a great circle, its path relatively to the earth is an ellipse with the earth in one of the foci. This is proved in the following way. It is found that in this its new orbit the sun's apparent size varies. The most natural inference to be drawn from this fact is that the suu's distance from the earth varies in the inverse proportion, and on this assumption the path is found to be an ellipse with the earth in one of the foci. But the sun and moon are not the only bodies which seem thus to move amongst the stars. There are a few others called planets, the motions of which seem to be iu no way connected with the earth, and although apparently more closely connected with the sun, yet, even with respect to it, their apparent paths are by no means ellipses or any other known curves. Let us now ask ourselves the question, "May not this annual motion of the sun relative to the earth be an apparent motion arising from a real motion of the earth around the sun?" The rotation of the sphere of the heavens having been proved to be similarly accounted for, it is very justifiable to suspect that such may be the case. As regards the sun, phenomena would be the same in either case, a positive revolution of the earth around the sun would produce an apparent positive revolution of the sun around

the earth. On the hypothesis, however, that the earth moves in an ellipse with the sun in one of the foci, we at once arrive at the Copernican Theory of the solar system, which, of all theories, alone gives a satisfactory and simple explanation of its movements.

Are there any analogies between the earth and the planets to induce us to class them together?

Like the earth the planets receive their light and heat from the sun, That it is so with the inferior planets and Mars, their phases tell us, and spectrum analysis proves to us that the light of all the planets, unlike that of the stars is merely reflected sunlight. The earth and planets, we shall presently learn, are bodies much inferior in magnitude to the sun, but comparable with one another.

KEPLER'S THREE LAWS APPLY TO ALL.

We have not, however, to depend alone on analogies. This assumed revolution of the earth gives not only a satisfactory explanation of the apparent motions of the planets, it gives the only rational explanation of a motion common to all the stars, viz., aberration, After correcting the apparent places of the stars for refraction, parallax, and precession and nutation, it is found that all the stars describe in a year small orbits, whose planes are parallel to the ecliptic. This motion, common to all the stars, is satisfactorily explained, and can only be explained on the hypothesis that the earth revolves around the sun, and not the sun around the earth, at the average rate of 19 miles per second, and that light travels through space at the rate of 186,000 miles per second, a fact first deduced from observations of the eclipses of Jupiter's satellites and found afterwards by actual experiment.

There is yet greater evidence that the earth revolves around the sun. This is found in the physical explanation of the motions of the solar system. These motions are the necessary consequences of the three laws of motion, and that of universal gravitation, as propounded by Sir Isaac Newton. These four laws not only give a perfectly satisfactory explanation of the motions of the solar system, but have much refined the very observation of them.

THE PLANET VENUS.

Now Venus, which will cross the sun's disc to-morrow, is a body just like our own earth, rotating about an axis and revolving around the sun. It is, however, nearer to the sun than the earth is, so that in the course of its revolution sometimes the sun lies between us and Venus (superior conjunction), and sometimes Venus comes between us and the sun (inferior conjunction.) (Explained by figure, also the phases of Venus and apparent sizes; also what is meant by the inclination of Venus' orbit to the ecliptic, and the line of nodes. Inclination of orbit equals 3° 23' 35"). It will be at once seen that a transit of Venus can occur only when Venus is in inferior conjunction, and at the same time near the line of nodes. To make this a little clearer, let me explain to you that just as a place on the earth's surface is determined by its latitude and longitude, so the place in the sphere of the heavens of any heavenly body is determined by its latitude and longitude, the latitude being the angular distance of the body from the ecliptic, as measured on its circle of latitude, and its longitude being the angular distance between the body's circle of latitude and that of the vernal Equinox, a definite point on the ecliptic where the sun is about the 22nd of March. In the sphere of the heavens the ecliptic and circles of latitude correspond to the equator and meridians in the sphere of the earth. Now, as the sun's apparent semi-diameter is just about 16' on the average, it is evident that if at the conjunction Venus' latitude, whether north or south, exceeds 16', a transit cannot occur, but if its latitude be less than 16', then Venus will cross some portion of the sun's disc, and be seen as a black spot creeping over it.

As we know exactly from observation the times that Venus and the earth take to revolve around the sun, it is easy calculating from these numbers how often transits are likely to occur. Thus, reducing $\frac{224}{365} \cdot \frac{700}{250}$ to a continued fraction, we get the following approximations, $\frac{8}{13}, \frac{235}{382}, \frac{713}{1159}$. (The numbers were explained.)

It is easy calculating that the change of latitude which Venus undergoes in eight years is greater than 16', so that in order that two transits, eight years apart, may occur at either of the nodes, Venus must transit in both cases some distance from the sun's centre, at one transit being north of the sun's centre, at the other, south of it. If a conjunction took place just at the time Venus was crossing its nodal line, then the transit would take place across a diameter of the sun, but there would be no transit eight years after that one, and, indeed, at the same node there would be no transit for 235 years. To-morrow's transit will be at the ascending node, and the next will take place in June 2004 at the descending node.

Let us now consider briefly how by the transit of Venus astronomers are able to measure the distance of the sun. Before doing this I must explain how the apparent size of a body depends on its distance, and also what we mean by parallax. The apparent size of a body is measured by the angle which it subteuds at the eye, and I can easily show you by a figure that as a body becomes more and more distant, just in the same proportion does it become smaller. (Explained by case of avenue and figures.) Many of you have also observed that when a bird is flying, or a balloon is floating in the air, the nearer it comes to you, the larger it appears. From the figure likewise, those who have a knowledge of elementary geometry will at once see that if we know the distance of a body, and its apparent size, we can calculate its real size, or, *vice versa*, if we now its real and apparent sizes we can calculate its distance. Now, what we determine in the transit of Venus, as I hope presently to show you, is the apparent size of the earth as seen from the sun, and as I have explained to you how its real size can be determined by measurement, we can thus determine its distance.

Allow me now to say a few words on the subject of parallax. Parallax is the change of direction in which a body is seen arising from a change of the position from which it is viewed. (Explained first by terrestial parallax and figures.) The parallax of a body, you will at once see from these figures, measures the apparent size of the distance between the two positions from which the body is viewed, as seen from the body itself. Hence, as before, if we know the distance between the two positions from which a body is viewed, and its parallax, we can determine the distance of that body.

Let me illustrate celestial parallax by explaining to you how the moon's distance from us is measured (Illustrated by figures.) We might even determine the moon's parallax by two observations at the same place. since the motions of the moon while the earth rotates for twelve hours are completely known, and can therefore be allowed for. Now why can we not apply this very direct method to determine the distance of the sun? Simply because the parallax of the sun, due to any change of position on the earth's surface, is so small, and a very small error in measuring this parallax would make a very great error in estimating therefrom its distance. At the distance of the moon, the apparent size of an equatorial radius of the earth is 57' 3", from which it is not difficult to calculate, since we have determined the equatorial radius of the earth, that the moon's distance is approximately 238,881 miles from us. Now, if an error of only 1" is made in the determination of the moon's horizontal parallax as this is called, there will result an error in the calculation of its distance therefrom of only about seventy

miles, but so small is the sun's horizontal parallax that the same error of 1″ would produce in the calculation of its distance an error of nearly 11,000,000 miles. To measure the sun's distance from us in the same way I have just explained the moon's is measured, would not be less difficult than for a man to measure how far a train in the moon moves in an hour, provided he could see the train and that on the moon trains travel about as slowly as they do here.

The transit of Venus, however, enables us to calculate the sun's parallax with a probable error of *very* much less than 1″. It is 2½ centuries ago since the great astronomer, Kepler, proved, from a iong series of observations, that it was very easy to determine the relative distances of the planets from the sun, and was enabled to enunciate the remarkable law that the squares of the periodic times of the planets are in direct proportion to the cubes of their mean distances from the sun, and the great Newton afterwards proved that that law was a necessary consequence of his grand law of universal gravitation, "tnat every particle of matter in the universe attracts every other with a force whose direction is that of the line joining them, and whose magnitude is directly as their masses and inversely proportional to the square of their distance." To take the case of Venus and the earth $(\frac{224}{365}\cdot\frac{700}{256})^2 = \frac{d^3}{D_e}$ you will easily understand from this, if we can determine the distance of the earth from Venus, or any of the other planets, we shall be able to calculate that of the sun. The problem to be solved is thus shifted from finding the parallax of the sun to finding that of any planet whatever. Now, none of the planets approach the earth so near as Venus does at inferior conjunction, and if we then can find the parallax of Venus, the problem of the sun's distance is solved. The transit oi Venus, you will readily understand from what follows, affords peculiar facilities for measuring its parallax. You might readily ask, how is it that at any inferior conjunction whatsoever it is not possible for us to measure Venus' parallax? The answer is very simple. At inferior conjunction Venus presents her dark side to us, and unless her black side is then projected on the face of the sun she is invisible.

At inferior conjunction of Venus the sun is 3½ times further from the earth than Venus is. Hence any error in determining the parallax of Venus will produce an error of 3½ times less in the determination of the parallax of the sun, but the great value of the transit of Venus for the determination of the sun's paraliax is that we can measure the parallax by time instead of by the direct observation of an angle. There are four distinct methods of observing the transit of Venus for scientific purposes.

### I.—DELISLE'S METHOD.

(Illustrated by a figure.)

Venus moves over $\frac{360\times60\times60}{224\cdot7\times24\times60^2} = 0''.067$ per sec.

Earth " " $\frac{360\times60\times60}{365\cdot256\times24\times60^2} = 0''.041$ per sec.

Therefore Venus moves relatively to the earth 0″.026 per sec, Now, suppose that the total parallax for a diameter of the earth is 16″ approximately, Venus will take to pass over this arc $\frac{16''}{0''.026}$ sec=10 min, nearly. Thus the problem is reduced to the measurement of a considerable portion of time. This method may be applied both at the ingress and egress of the planet on the sun's disc, and as the internal contacts of these epochs can sometimes be determined practically an error of 1 sec. would entail an error 600 times less in getting the sun's parallax. Practically, no such favourable circumstances as is implied in the figure are available, and tremendous difficulties of calculation are caused by the situations of the places of observation and the rotation of the earth which cannot be neglected.

### II.—METHOD OF DURATIONS,

The next method I shall explain is under favourable circumstances much easier of application than the first, but the favourable circumstances are not so likely to occur. It is known as the method of durations, and wiil, as well as the previous method, be adopted in our own observatory. (Illustrated by a figure.) Suppose K and Q to represent Kingston and Queen Adelaide Island, which have nearly the same longitude, but very different latitudes, and that the transit is simultaneously observed at these places. At K Venus will be seen to describe a chord of the sun A B, and at Q a chord C D, and evidently the distance between these two chords : distance K Q :: distance of Venus trom the sun : distance of Venus from the earth, *i.e.*, : : 5 : 2 approximately (Kepler law III). Now, as K Q can be easily calculated from the known figure and dimensions of the earth, the absolute breadth in miles of the zone A E B C F D is determined. If now we but know the position of these chords relatively to the sun's centre, we shall evidently be able to deduce the diameter of ihe sun in miles. Knowing this, its distance is immediately derived from its apparent size. Now, as we know the rate at which Venus will cross the sun's disc (viz., 0″.026 per sec.), if we but measure the times of transit across the chords A E B C F D, we at once get their angular lengths, and can then calculate their angular distance from the sun's centre. The differences of these distances gives us the breadth of the zone in angular measure, and, as I have just shown you how we determine its breadth in miles, the diameter of the sun in miles and then its distance is determined. Observe particularly here that the whole problem is practically reduced to the observation of a considerable period of time (to-morrow it will be more than five hours), and as astronomers can measure time to about the tenth part of a second, you can easily imagine the exceedingly favourable opportunity here presented, if circumstances permit.

The principal difficulties in this method are to catch precisely the exact moments of internal contact at ingress and egress,

A modification in this method, in which the rotation cf the earth about its axis is taken advantage of, is known as Halley's method, but in the present transit cannot be applied.

### III.—PHOTOGRAPHIC METHOD,

The third method is known as the Photographic Method, and consists in taking photographs of the sun's disc every few minutes during the transit, and thus mapping on the photographic disc of the sun the very chords crossed by the planet. A special instrument known as the photo-heliograph is used for this purpose.

### IV,—HELIOMETRIC METHOD,

The fourth method is called the Heliometric Method, and consists in measuring directly by an instrument known as the Heliometer the angular distances between the edges of Venus and the sun, and thus deducing at different times during the transit the angular distance between the centres of Venus and the sun.

The calculations required after the observations made according to the latter two methods are similar to what I have already explained for the method of durations.

Before dismissing this subject of parallax, let me direct your attention to some of the truths which we can at once deduce from a determination of the sun's distance, In the first place, from Kepler law III, we can, by simple observation of the times of revolution of the planets

around the sun, determine the distances of the planets from the sun, and likewise from the earth. The distances of the primaries being known by measuring the apparent sizes of the orbits of their satellites we at once get the distances of the satellites from their primaries.

Again, knowing the distances of the members of the solar system from us by measuring their apparent sizes we can at once get their magnitudes. Thus, so far as distances and magnitudes are concerned, the whole grand solar system, of which our earth forms but a small member, is known.

But again, by knowing the size of the earth's orbit around the sun, we have command of a grand base line, viz., the diameter of the earth's orbit with which to measure the parallax of the stars which twinkle at inconceivable distances beyond our system, if there be any.

Now, with the exception of a very few, the astronomer finds to his utter astonishment that even with such a base line the fixed stars have no parallax. This means that 186,000,000 miles is simply nothing compared to the distances of the stars. Compare now this magnitude with the size of the particle of musk which affected the nostrils of a certain writer in the COLLEGE JOURNAL, and we have an illustration of the smallest and greatest magnitudes which are attempted to be measured by the physicist.

The greatest heliocentric parallax detected yet in any of the stars is about 1". With such a base line and such a parallax it is easily calculated that the nearest star might sneak away from things visible to us, and we would not detect its disappearance for 3½ years. I mean by that that the light which we now receive from the nearest fixed star was sent from it 3½ years ago, even although that light has been travelling at the rate of 186,000 miles per second.

Let me now briefly explain to you what you will see to-morrow. (Illustrated by figures.)

Before concluding this lecture, ladies and gentlemen, I desire to draw your attention to the fact that in Kingston there are two citizens who for some months have been spending their time and energies to assist in the observation of the rare event of to-morrow, and I think we ought to feel proud that in the history of the transit of 1882, Kingston will figure as assisting in the solution of one of the grandest problems which can be solved by man,

## ROYAL COLLEGE.

### MEDICAL CO-EDUCATION A FAILURE.

THIS all absorbing question which has been the topic of conversation and serious discussion among the students of the Royal during the past week or ten days has well nigh excluded all thoughts of the JOURNAL, and the morning of publication finds us without our modicum of "copy." Moreover, we believe we did receive a hint from our managing editor that perhaps it would be better not to make any reference to this co-education question, but now that the matter has been so amicably settled, and such an excellent arrangement arrived at, we have no hesitation in presenting briefly the facts in the case before our readers.

The week just ended has been a momentous one in the history of the College of Physicians and Surgeons, Kingston. A great question has been decided, so far at least as this college is concerned.

As most of our readers are no doubt aware co-education of the sexes has been on trial in the Royal College since the beginning of last session. Since the adoption of this course, from its very commencement, there has been a murmur of discontentment among not a few of the students, who felt that the Faculty had departed from their original prospectus, wherein they displayed their liberality and philantrophy in making known to the public their intention of devoting their valuable time to the furtherance of the furnishing of a most worthy object, namely, a complete medical education for women, the course to be completed in four summer sessions, and in departing from this course and introducing the female students within the halls of the college during the winter sessions, the male students claimed that they were deprived of the full benefit of the lectures in all the departments, with perhaps one or two exceptions, and that on the whole the presence of the ladies was an obstacle in the way of their obtaining a full and complete medical education. It will be unnecessary here to go further into detail, as many of the objections will be at once apparent to those who have thought on the subject. To the public, and also, it may be added, to the Professors, everything appeared to be going on well, but the fire which had been slumbering so long was suddenly fanned into flame by the unwarranted and uncomplimentary fashion in which the female students interrupted one of the lectures and treated at least two of the professors with disrespect. All the male students, with the exception of those of the final year, held a meeting on Friday, the 8th inst., presented to the Faculty a memorial setting forth their objections to the existing state of affairs, and stating that they would no longer than this session attend the Royal, if male and female students were to take lectures together after the Christmas holidays, or if there should be any female students in attendance after the coming spring. The final students were not requested to sign the memorial, as it was expected that in all probability they would bid adieu to the college at the end of the session.

The Faculty regarded this action of the students as an attempt to dictate to them, and, under this impression, very properly informed the students that the government of the college lay in the hands of the Faculty and not with the students.

Now, it seems to us, that each party made a mistake at the very outset of this trouble. We think that the objections to co-education in medicine made by the studeuts were strong and worthy the serious consideration of the Faculty. Unfortunately, however, the memorial containing these obiections, which in the main was couched in language the most respectful, concluded with a declaration of the students' intentions which was so strongly worded that the professors regarded it as a threat. It would have been much better and far more becoming had the students after stating their objections, requested the Faculty to make some arrangement whereby the grounds for their objections would be removed. With all due respect to the medical professors, we say that much of the trouble would have been avoided had they not been too hasty, and concluded that they were being dictated to by the students. That this was not the intention might have been inferred from the most respectful tone of the greater part of the memorial. Thus, owing to these mistakes a breach was made between professors and students, between whom there had always previously existed the most cordial relations, and the task of settling the difficulties arising from co-education was thus rendered more complicated. The professors very properly would not not submit to dictation from the students, and the students felt aggrieved by the manner in which their memorial had been answered, and they (the students) at once communicated with other medical colleges in the Dominion, asking for terms on which some fifty or more students would be accepted, and in reply received such information as enabled them to again approach the Faculty, this time with an alternative.

The matter now assuming very serious proportions, and appearances pointing to the fact that the Royal College was in danger of being at least very materially injured, if not completely destroyed, the Faculty and stu-

dents held meetings at the college building, but in separate rooms, and communications passed between them, but instead of coming to a settlement, the affair was only aggravated, the students being determined to secure what they had asked for, and which, as was afterwards proven, was more than could be legally granted. But as both parties were desirous for the continuance and prosperity of the Royal College, we felt confident that an amicable settlement would yet be obtained, if some of our influential citizens would step in and endeavor, by kindly mediation, to bridge over the gap, and, we are glad to say that this "consummation devoutly to be wished" was finally attained through the energetic and painstaking efforts of four Kingston's prominent men, namely, Mayor Gaskin, and ex-Mayors Gildersleeve, McIntyre and Pense. To these gentlemen the City of Kingston owes a debt of gratitude which we are sure is deeply felt, if not already expressed, for the retention in our midst of an institution like the Royal College, of whose standing and influence the citizens have such good right to be proud—and the Faculty as well as the students have cordially thanked the mediators for their services and are pleased with the results, for it was frankly acknowledged that but for their mediation a rupture would have taken place which would have proved disastrous to all concerned.

These gentlemen made it their special business on Thursday afternoon last to interview the members of the Faculty as well as some of the prominent students, and then having arrived at the facts in the case, they attended, by request, a Facultv meeting on the same evening at Dr. Lavell's office, being cordially received. After a discussion of an hour or two, what appeared to be a solution of the difficulty, was arrived at, namely, the proposition for a double course of lectures, one for each sex, and the visitors emerged and wended their way to the College "den," where the students were anxiously awaiting their arrival, with a promise of the Faculty not only to do the double work involved in this double course, but to abandon the admission of female students as well, especially so long as the Colleges of Canada were not in full harmony upon the subject. The proposition, virtually, to all intents and purposes, involved the formation of a separate and distinct medical college for women. Furthermore the Faculty guaranteed additional clinical lectures to the students, if they will attend.

Upon their arrival at "The Den" the deputation received an enthusiactic reception from the assembled students, who evidently felt that in these gentlemen they recognized "friends indeed." After submitting the mediatorial proposition each member of the deputation addressed the students, and in forcible and eloquent language the advantages of the proposition were pointed out as allowing both Faculty and students to retire from their former position gracefully, by practically granting all that the students had a legal right to ask and preserving the honor of the College towards the ladies. The students would be guaranteed complete lectures, and whether real ground existed for the alleged suppressions was therefore aside from the question; and they could point to the students of other colleges who were looking to them to fight the battle against co-education. They had succeeded in demonstrating that a separate ladies' college was the only practicable scheme. They had made sure the fulness of their own education and could not reasonably go further and say that the ladies should be forced out altogether, and be deprived of theirs, since they would no longer interfere with their course in any way.

The deputation being requested to remain, and cheerfully giving their assent thereto, an animated debate was commenced, in which nearly every student present took part, questions being very freely put to the visiting gentleman, and as freely answered. Finally, good judgment asserted itself, and the following resolution was carried at one a.m. without a dissenting voice, although two or three students declined to vote at all, though they felt the proposal to be a good one: "*Resolved*—That having heard the gentlemen who have acted as mediators between the Faculty and ourselves, and the assurance that in future the Faculty agree to give an education to the male and female studants separate and distinct in every particular, and that it is not their intention to admit females in the future, we accept the same as a satisfactory settlement of existing difficulties."

A vote of thanks was then tendered to the deputation, and they were given three hearty cheers and "For they are jolly good fellows." The students then escorted the gentlemen to their respective homes and received from each their thanks and congratulations.

This is what one of the deputation has said of the "boys:" "From a serious lot of anxious debators, now that the trouble was over, they became a jolly lot of students, relieved of a serious trouble, and with the love of their Alma Mater fully restored. In spite of appearances in their late determined rebellion they regard their Professors warmly, and this was demonstrated by their visits to the residences after the settlement to give them farewell cheers ere they left to-day for their homes. The students, in spite of the prolonged absence from their classes and excitement of the week, appeared last night uniformly steady and decorous, and are a body of young men whom it is worth while undergoing even a more prolonged and delicate mission to once more bring into the best of harmony with a local institution."

The following letter closed the official correspondence:

*To the Secretary to Stvdents of the Royal College:*

DEAR SIR—I am in receipt of your letter of this morning, enclosing a resolution passed at a meeting of the students last evening and desire to say that the Faculty accept the suggestions of the gentlemen who have interested themselves in their present College difficulties. The Faculty agrees to give in future to the female students now attending College a medical education separate and distinct in every particular from the male students, and as the Faculty believe that under existing circumstances, co-education in medicine is a failure, there is no intention of admitting female students in the future.—I am, yours faithfully,

FIFE FOWLER, Registrar.

December 15th.

Thus harmony has been restored, the dignity of the Professors maintained, and the object of the students attained. The new arrangement virtually creates a new medical school in Kingston, so that the good old city takes the lead of all others in the Dominion, having one medical school for women and another for men only. It will be seen that by this new departure the Faculty of the Royal College alone are sufferers since, in order to make matters agreeable all around they have taken upon themselves a double set of lectures. This involves not only a heavy strain upon their mental and physical endurance, but makes a serious inroad upon their time, which, to medical men, is valuable.

That the Professors are willing to undertake double work is an evidence of their deep interest in the College and, also, that they are willing to meet all reasonable requests of their students.

Long life to the Royal! and may she ever in the future, as in the past, send forth sons who shall distinguish themselves in the paths of science, and thus reflect credit upon their Alma Mater.

---

WHEN should a very æsthetic young man propose to his lady-love? He should Oscar Wilde day light is fading

## CORRESPONDENCE.

***We wish it to be distinctly understood that the JOURNAL does not commit itself in any way to the sentiments which may be expressed in this department.

### OUR NEXT CHANCELLOR.

*To the Editor of the Journal:*

THE question is being asked with increasing frequency, "Who is to be our next Chancellor?" I venture to suggest the name of one who will in every respect be a worthy successor of the present distinguished occupant of the highest officer connected with the University. The name of James McLennan, B.A., Q.C., Toronto, is familiar to every Alumnus of Queen's. His qualifications for the position are too patent to need enumeration. As a student he was distinguished for marked ability and success; as a lawyer he occupied a foremost place in his profession; as a friend of the Universiiy, his time, professional services and means have always been generously placed at the disposal of his Alma Mater. These are claims that can hardly be equalled. Certainly they cannot be surpassed by any other whose name can be mentioned in connection with the office.

If Mr. McLennan consents to become a candidate for the Chancellorship, I bespeak for him a generous and hearty support.

Faithfully yours,

M.

### THE CHANCELLORSHIP.

*To the Editor of the Journal:*

DEAR SIR—In answer to the letter from a "Member of the Council," which appeared in your last issue, I would like "to suggest a name and give my reasons," as he asks someone to do. It can hardly be called a suggestion on my part, however, for the person whom I have now in view, was frequently mentioned as a fitting candidate at the time of the last election. I have reference to no less a personage than the Right Hon. Sir John Macdonald, an old Kingstonian, a graduate of Queen's, a man, in fact, in every way qualified for the high position of Chancellor of this University. Again, from a purely selfish point of view, what could be a better advertisement for the Institution than the election of Sir John to the Chancellorship. But there can be nothing gained by discussion, as I feel sure no one will disagree with me. Which member of the Council will be the first to move in the matter?

I may just add, Mr. Editor, that in my opinion politics ought not to be considered at all. For my own part I am a through-going, though not a bigoted.

GRIT.

*Gu fear riagladh "Cunntas-lathail Oil-tigh na Bannrigh."*

A MAIGHSTIR:

THA mi 'n dhochas nach bi ni 's am bith ri chuir as mo leith air son focal no dha a sgriobhaidh air son a phaipeir—naigheachd so, ann 's a canan 's toigh leum cho maith.

Cha lionmhor an aireamh anns 'n oil-tigh so a thuigea a Ghaelic; agus cuid dhe 'n aireamh bheag so fein cha labhair iad i, ged a thuigeas iad i; cha fhiosraich mi co dhui se phrois no ciod a ni 's coireachd dhoibh.

Iomadh uair air dhomh a bhi labhairt mu thimchioll cliu na Gaelic, labhairaidh duine ruim ag radh nach eil feum s' 'm bith air a Ghaelic anns 'n latha so; ach tha dhream a labhairais mar so aineolach air fuighantas na canan so a tha na sheine na caint air bith eile air am bheil sinn eolach, ach a h-aon. Chuala sinn fo chionn ghoirid seanachas mineachaidh air dain Ossian, agus fhogulum sinn gu deimhinn gu fhiach iad 'n rannsiachadh agus 'n ionnsachadh.

An duine aig am bheil barrachd eolas air a Ghaelic, san aige mar an cendna tha fios air cho feumail agus a tha i ann a rannsachadh a' chainteair. Tha sinn a faichean gu bheil a Ghaelic a duigh air a ionnsachadh ann a moran dhe na h-oil-tighean air an taobh eile de'n chaun; agus anns 'n tir so fein tha sinn a faichean gu bheil ni's mo agus ni's mo gh-irratas aig moran dhe'n shluagh air son cumail suas agus ionnsachadh na caint so. Anns a Bheinn—Rioghail tha 'n t- Olla Mac Nish a teagaisg na Gaelic anns an oil-tigh gach h-uile shuidhe. Agus tha mi dhochas 'n iuin ghearr gu bhi againn ann 'n h-Oil-tigh na Bann—Righ cathair foghlum na Gaelic; ach mu dheibhinn so bi ni agam ri radh aig am eile. Moran taing dhuit air son rum anns a phaipeir luachmhor so air son mo litir. Slan leat.

IAIN.

### COLLEGE SOCIETIES.

#### DIALECTIC CLUB.

AS we briefly announced in a former issue, a number of students have had in contemplation for some time, the formation of a Philosophical Society. No definite steps were taken, however, until about a month ago, when a preliminary meeting was held. This meeting was attended by some fifteen or twenty gentlemen—principally members of Dr. Watson's classes—who, after a short discussion, resolved, "that it was expedient to form a society for the discussion of philosophical questions." This motion was made a starting point, and in a very short time a skeleton constitution was drawn up, a series of meetings arranged for, and officers elected, as follows:

Honorary President—Prof. Watson, LL.D., F.R.S.C.

President——E. Holton Britton, '83.

Vice-President—A. Givan, '83.

Secretary-Treasurer—G. Y. Chown, '84.

The "constitution" was made as short and simple as possible. It provided, however, among other things, for the holding of regular meetings throughout the session, at which essays are to be read and discussed, and questions answered; for lectures, to be delivered at intervals by eminent men from other universities; and for the formation of a library of philosophical works for the use of members.

At the first regular meeting Mr. S. W. Dyre, '83, read a paper on Spencer's "Deduction of Force"—an exceedingly able essay, which was thoroughly appreciated. At the second meeting, which was opened to the public, Professor Clarke Murray, LL. D., of McGill University, Montreal, lectured on "Berkeley." On this occasion nearly all the Arts Professors and quite a number of citizens and students were present. The lecture was able, eloquent and interesting, and was enjoyed to the fullest extent. At its conclusion Mr. Britton moved, and Mr. McLeod seconded a vote of thanks, which, after a speech by Principal Grant, was carried enthusiastically. Dr. Watson occupied the chair.

The Dialectic Club, since its inauguration, has enjoyed almost unexampled success, and is, in fact, already recognized as one of the leading societies in the University. We predict for it continued and increased prosperity.

### MATHEMAIICAL SOCIETY.

THIS society has been formed by the students of the Mathematical and Physical Classes, for the discussion of problems bearing on their class work. The officers are:—

Hon. President—N. F. Dupuis, M. A.

President—Rod. Mackay, B. A.

Vice-President—J. M. Dupuis, M. D.

Sec. and Treas.—A. E. McColl, '85.

Committee—Messrs. Chamberlin and Robertson.

The meetings are held every alternate Friday evening in the mathematical class room, which Professor Dupuis has kindly loaned for the purpose. Friday evening. Dec. 1st, was appointed for holding the first meeting, but on account of the Alma Mater elections, it was not held until Saturday evening, when, after discussion of general business, Dr. J. M. Dupuis read an interesting paper on the construction and use of the Sun-dial. He first gave a short sketch of the various means used at different times to obtain a proper division of time, and then treated of the construction of the Sun-dial, first trigonometrically and then geometrically,

In both of these processes, the construction of the dial was treated of universally, showing the means of constructing a dial for any latitude. After treating of the position of the dial with respect to the axis of the earth and the angle of gnomon, he concluded by treating of the inequality of time as shown by the dial, and the use of the Table of Equation of time.

### USURPED RIGHTS.

IN civilized countries it has long been the established rule that men should make large and important concessions to the opposite sex in deferrence to the inferiority of the latter in physical strength. All the more burdensome kinds of labour have been done by the male population. The weak hands of women have been spared the xertion necessary to steady the heavy plough, guide the unruly horses, and wield the course shovel, pick and axe. Their tender feet have been saved from following the racking harrows, wading in the muddy ditch, and treading on the cruel battlefield. Their fragile bodies have been relieved from bearing the heavy sack, the dirty hod, and toilsome burdens generally. Their delicate faces have been unaccustomed to the black grime of the coal mine, to the engine-room and the threshing mill. These and ninety-nine more of the most unpleasant duties of life have been almost entirely performed by the members of the more robust sex.

As a recompense on the part of men, and a counter-concession on the part of women, the former have been accorded the honour of exclusive right to some of the most advanced positions in life. Parliamentary halls have not re-echoed the shrill voice of women; the cloaks of lawyers and judges have not enveloped their slender forms; pulpits have not been pounded by the frail fists of females; surgical instruments have not been grasped by the compassionate hands of ladies. Other important offices could be mentioned which have generally been filled by men.

Of late this mutually concessive method of carrying on the business of life in civilized countries has been somewhat disturbed by the ambition of the weaker sex, whose members may now be seen treading the halls of colleges, sitting in academic shades, and aspiring to those positions which have hitherto been accorded to men. While they show no desire to oust the members of the ruder sex from the humbler and more toilsome pursuits, they attempt to drive him from those places of distinction for which he has been thought better fitted on account of his supposed mental superiority. Thus equilibrium is seriously disturbed, and we have some fears for the result. If man is superior, both physically and mentally, the state of matters as existing in the past is the proper one; if he is superior in body alone, that superiority is to his disadvantage; if he is superior in neither respect, he is greatly imposed upon by the gentler sex.

## POETRY.

### AN ANSWER.

"CAN it be good to die?" you question, friend;
"Can it be good to die, and move along
Still circling round and round, unknowing end,
Still circling round and round amid the throng
Ot golden orbs, attended by their moons—
To catch the intonation of their song
As on they flash, and scatter nights, and noons,
To worlds like ours, where things like us belong?"

To *me* 'tis idle saying, "He is dead."
Or, "Now he sleepeth and shall wake no more;
The little flickering, fluttering life is fled,
Forever fled. and all that *was* is o'er."
I have a faith—that life and death are *one*,
That each depends upon the self-same thread,
And that the seen and unseen rivers run
To one calm sea, from one clear fountain-head.

I have a faith—that man's immortal mind
May cross the willow-shaded stream nor sink;
I have a faith—when he has left behind
His earthly vesture on the river's brink,—
When all his little fears are torn away
His soul may beat a pathway through the tide,
And disencumbered of its coward-clay
Emerge immortal on the sunnier side.

So say:—It must be good to die, my friend,
It must be good and more than good, I deem,
'Tis all the replication I may send—
For deeper swimming seek a deeper stream.
It must be good or reason is a cheat,
It must be good or life is all a lie,
It must be good and more than living sweet,
It must be good—*or man would never die.*

GEO. F. CAMERON, '86.

## DE NOBIS NOBILIBUS.

IF the "Coucursus Iniquitatis" has not lost its usefulness good "subs" might have been spotted at the annual meeting of the A. M.

---

THE Professor of Chemistry—"Mr. C——, how is it that your brother is not attending the class?" Mr. C—"He is taking Physics, sir." Prof.—What, is he sick?"

---

A STUDENT who saw the transit of Venus the other day, describes Venus as being like a small piece of black court plaster on a pretty girl's face. Like it, it was but a mere black speck, which entranced the glory of the sun, over whose surface it passed.

---

AND now Xmas draweth nigh, and the bashful Freshman doth go down street early in the morning, before the wily Junior or the reverend Senior have left their beds, bearing in his hand the rhino, wherewith to invest in a card to send unto his faithfnl lady-love.

---

MR. J. J. DOUGLASS, '85, is "fractus bello," as he expresses it, and has gone to Peterboro on furlough. He expects to be back after Christmas, when we hope he will take his place in the ranks able to do better service than ever.

---

THE freshmen were determined to battle to the death with the "concursus." One of the number was heard singing their war song, which begins, "Oh! we are the wheat that can't be threshed." We suppose it is because they are *too green*.

---

"YE GRAVE AND REVEREND SENIORS" are to have a grand banquet on the 22nd inst. at the Burnett House. They will undoubtedly have a jovial time.

---

THE "Concursus Iniquitatis" has held another session, and, in consequence, another freshman is seen going about his accustomed duties

"With bowed head and lowly mien,
A subdued phantom of his former self."

---

REV. JAMES AWDE, B.A., '79, one of the ablest students in philosophy that has graduated in a number of years, has consented to read a paper before the Dialectic Club at an early date. The subject has not yet been made known.

---

A STUDENT of the natural science class says he experiences great difficulty in his study of Insectivora, and quite agrees with the sentiment expressed in these lines by O. W. Holmes:—

"I was sitting with my microscope upon my parlor rug,
With a very heavy quarto and a very lively bug;
The true bug had been organized with only two antennæ,
But the humbug in the copper plate would have them
twice as many."

---

THE Glee Club is now fully organized, and some good singing may be expected from them this year.

THE following lines were found in one of the corridors, addressed to the JOURNAL. Though we do not like to encourage the perpetrator of such puns, we publish them as a curiosity:

A ONE-NIGHT'S TRAGEDY.

The lonely pair sat on the steps,
And talked and laughed aloud.
"Why is the moon, love, like my arm?"
"Because its 'neath my *cloud*."

"You've guessed it right," he softly said;
"Now, why no moons but one?"
"On that, I think, I'll have to get
My light, sir, from the *son*."

He was a stalwart sophomore,
She was a blushing *maid*,
Who *made* his weakening pulses throb,
As her hand in his she *laid*.

And then, of course, it was *delayed*
Within his brawny grasp,
And thus the two did *waste* the hours
Her *waist* within his clasp.

And as the night grew on apace
And time came for departing,
Says he, "My dear, though no upstart,
I straight must be upstarting."

He prest her to his beating heart,
A kiss upon her lips is;
And for a minute then, or two,
His life is one [——]

When suddenly he flew in air,
As though a goat had struck him;
Her papa's boot had lifted him,
And in a snow bank stuck him.

He lay there on his youthful back,
His life's blood fled its fountains,
His *knees* were pointing heavenward,
Like peaks of the *Pair-o'-knees* mountains.

Next morn a Freshman friend went by,
And found this pale soph dead;
They took him to a churchyard near
And dug his lowly bed.

Upon a wooden slab these words,
He carved while he was cryen:
"Beware all loving youths, for here
Our love sick soph is *Lyen*." '86.

---

RATHER a good story is told of two juniors who were wending their way to their boarding house, about two o'clock in the morning, not long since, both feeling slightly—but no, judge for yourself. On the way one of them happened to stumble against an obstruction, which he evidently took for a fellow-being, for he at once let out from the shoulder and floored said obstruction, which was by the way not a man but an empty tree box, standing against the tree it was destined to encircle. Hearing the thud caused by the fall, he straightened up and triumphantly hiccoughed to his friend, "I'ze—hic—floored 'im, Jim, sure. You—hic—help 'im up, Jim." Jim at once stumbled on to the road. and groping around, finally came in contact with the prostrate tree box, but finding it stiff and unyielding, became alarmed, and stammered out, "You've—hic—killed him, Tom, deadsh door—hic—nail. What'll ye do—hic—about it, eh?" Tom was unequal for the occasion, but Jim quickly made a proposition. "Tell ye's what we do—hic—Tom; you—hic—go and fetch—hic—boys, an' I'll stay here wish zur—hic—

corpshe." The other assented and stumbled off, but soon forgot his mission, and on reaching home was put to bed by his fellow boarders. Jim was found in the morning with his arms still clasped around the victim of his friend's muscular prowess, lying in the gutter taking "care of zur corpshe."

S. H. SNIDER, M. D., 81, of Carman, Man., has taken unto himself a silent partner from Hamilton. Well done, Sam.

## ITEMS.

CONNECTING link between the vegetable and animal kingdom.—Hash.—*Ex.*

HAZING has reached a state in Lafayette College as yet unparalleled in college history. There the Sophomore with a malignity of purpose utterly unworthy of scholars and gentlemen, got the Freshmen in a public hall and set them down to an elegant banquet, and as each Freshman entered a state of coma, or succumbed to indigestion, a howl of fiendish delight rent the air. This species of refined cruelty has actually been applauded by the college press. It is said that the Freshman class in Lafayette is this year more than usually large and robust.

DR, A., with merry twinkle: "Mr. English, you may report for the first half of the Freshman class, embracing the ladies." Smiles of satisfaction. "Mr. Blackwell, you may report for the second half—likewise embracing the ladies." Blackwell faints. Moral—Doctor A should not manifest such inconsistency with these young gentlemen.—*Ex.*

SHE was a very pretty young person, and he was trying to talk his best. "I'm a sophomore," he said at one of her questions. "Why, how can that be? You ——" But she saw his discomfiture. "Oh, I see." she said, with the softest look of mystification, "You have two sophomore years at your college."—*Yale Record.*

HE was a facetious sophomore. "What quantities of dried grasses you do keep here, Miss Smith. Nice room for a donkey to get into." "Make yourself at home," she said with great gravity.

IN THE kingdom of Siam, all college students are allowed but two wives. This is shameful. They are putting more rules on every year. After awhile they will probably be limited to one. The Freshman should certainly kick.—*Ex.*

WHO was the first stocking mender? Xantippe, who used to darn old Soc.—*Ex.*

"AND oh, by-the-by, my son tells me you don't make his shirt collars stiff enough. He's in the Guards, you know, and they go in for being very particular!" "Well, ma'am, all I can say is, I've got a son in the Guards myself, and I allers washes for 'im when he comes 'ome, and he don't make no complaints!"

"Her lips were like the leaves," he said,
"By autumn's crimson tinted."
"Some people autumn leaves preserve
By pressing them," she hinted.—*Ex.*

MR. ANDREWS, translating Virgil—"'Three times I strove to cast my arms about her neck, and—' that's as far as I got, Prof.'" "Well Mr. Andrews, I think that was quite far enough."—*Ex.*

A youth was bidding a maiden adieu,
And ever anon. as he shook her hand,
He'd turn again, with lingering step,
And some oft-answer query again would demand.

This bored the maiden, so at last she said, "Don't you think this is too much adieu about nothing?—*Princetonian.*

CLASSICAL professor (to student translating Cicero)—"Now, Mr. S., read a few lines of the text." (Text begins 'Tu, tu, Antonii,' &c.)

Student (starting out boldly)—"Chew, chew, Antonii, &c." (Uproarious applause.)

Prof.—"Now, Mr. S., please try and give that a little more classical pronunciation."

Student (making another gallant effort)—"Too, too, Antonii," &c. (Lady students strike an attitude.)

THE class of '82, Yale, gave $10,000 to the athletic sports.—*Ex.* 'Evings! Think of it '83, and make up your mind to do something for your country next year.

AMHERST is soon to have a new gymnasium. One person has contributed $25,000.—*Mercury.* Come away, little children!

THE Prof. of Philosophy strikes the nail on the head when he mentions to the youth, who give the universal negative, 'not prepared,' that they have not been *agonizing* enough. Aud it is clear to all that no one will be able to depict the agony on their countenance in the spring, if they don't.

THE *Oberlin Review* thus puts it delicately in its personal column: '76—Miss —— paid a visit to friends in Oberlin some time ago. She is still connected with the institution for imbeciles at Columbus."

THE faculty at Williams have a private tennis court, and play enthusiastically.—*Mercury.* Humph! Guess they copied from us.

NO LESS than 758 students matriculated at Oxford in 1880, and 805 graduated—403 with the degree of B. A., and 322 with M. A. In 1881 there were 3,160 matriculated students at Edinburgh, of which in Arts there were 1,037; 433 graduated in Arts and 305 in Medicine and Surgery.

COLUMBIA'S aggregate endowment is now $5,300,000, of which $500,000 was received from the late Stephen Phœnix. The income is $281,000, and the number of students 208.

DALHOUSIE has again been made the recipient of favors from her distinguished benefactor, George Munro, Esq., of New York. This time it is the endowment of a chair in Metaphysics and English Literature. The new professor, Dr. Schurman, has won distinguished honors both in this country and on the other side of the Atlantic. He has latterly been a professor at Acadia College.